

J. TYPHOON LORNA (201200Z-261200Z AUGUST 1961)

SEVERAL DAYS BEFORE THE FIRST WARNING WAS ISSUED ON LORNA (201200Z) A CONFUSION OF WEAK VORTICES EXISTED OVER THE SOUTH CHINA SEA AND THE PHILIPPINE SEA. THE SURFACE PRESSURE GRADIENT WAS RELATIVELY FLAT THROUGHOUT THE AREA. EASTERLIES PERSISTED OVER THE ENTIRE PHILIPPINE SEA AND EQUATORIAL WESTERLIES EXTENDED ACROSS INDO-CHINA AND THE PHILIPPINES TOWARD GUAM FROM THE EQUATOR TO 15N. THIS CONDITION BEGAN TO MODIFY RAPIDLY ON 19 AUGUST AND THE 200000Z SURFACE CHART DEPICTED THREE SIZEABLE CYCLONES, ONE IN THE SOUTH CHINA SEA, ANOTHER JUST E OF THE PHILIPPINES NEAR 15N 131E THAT BECAME LORNA, WITH A THIRD CYCLONE SITUATED QUITE CLOSE TO GUAM.

WEATHER RECONNAISSANCE AIRCRAFT THAT INVESTIGATED THE CENTER DID NOT INDICATE A WELL ORGANIZED SYSTEM ON THE 19TH, HOWEVER THE FIX MADE ON 20 AUGUST REPORTED 30 KT SURFACE WINDS NEAR THE CENTER WITH AN ORGANIZED CLOUD AND PRESSURE SYSTEM, THUS THE FIRST WARNING WAS ISSUED ON LORNA AS A TROPICAL DEPRESSION WITH 30 KT SURFACE WINDS. THE CYCLONE INTENSIFIED AT THE RATE OF 10 KTS PER 6 HOURS, BECAME A TYPHOON AT 210600Z, CHANGED DIRECTION FROM NW TO W THEN SW, AND LOOPEL WITHIN 48 HOURS OF THE FIRST WARNING. THE LOOP WAS ABOUT 25 MI IN DIAMETER, OCCURRING BETWEEN 212100Z AND 221200Z AT AN AVERAGE SPEED OF 4 KTS. THE SURFACE WINDS AROUND THE TYPHOON INCREASED IN SPEED FROM 75 TO 90 KTS DURING THE LOOP AND CONTINUED TO INTENSIFY TO A MAXIMUM OF 120 KTS AS IT MOVED NW TOWARD TAIWAN. LORNA PASSED 45 MI NE OF BATAN ISLAND AT 241030Z, CAUSED THE PRESSURE TO FALL TO A MINIMUM OF 981.9 MB AND CREATED WINDS OF 40 KTS WITH GUSTS TO 65 KTS.

LORNA BEGAN WEAKENING AFTER 241200Z AND BY THE TIME IT PASSED OVER THE COASTLINE OF TAIWAN AT 242200Z THE SURFACE WINDS HAD REDUCED TO 90 KTS. THE TERRAIN EFFECT FURTHER REDUCED THE SURFACE WINDS TO 40 KTS WHILE OVER LAND. AFTER THE TYPHOON PASSED INTO THE STRAITS OF TAIWAN AT 250300Z, THE SURFACE WINDS INCREASED TO 50 KTS. THE TYPHOON MOVED INLAND THIS TIME OVER THE ASIATIC MAINLAND AT 252100Z WITH SURFACE WINDS OF ONLY 35 KTS. THE CIRCULATION QUICKLY DISSIPATED, PRODUCING SURFACE WINDS OF ONLY 20 KTS BY THE TIME OF THE FINAL WARNING AT 261200Z.

LORNA DID NOT FOLLOW ANY FLOW PATTERN THAT WAS DEPICTED BY THE STANDARD LEVEL CHARTS, NOR DID THE SPACE MEAN FLOW PATTERN SATISFY THE COMMON DEFINITION OF A "STEERING" CHART. THE 500 MB RIDGE LINE WAS AT ABOUT 31N, THAT OF THE 200 MB WAS ABOUT 1 DEGREE FURTHER N, WITH THE 700 MB RIDGE LINE FALLING UNDER THAT OF THE 500 MB CHART. LORNA FORMED UNDER THE MIDDLE OF THREE CYCLONES EXISTING IN THE E-W TROUGH ON THE 500 MB CHART; THE DESCRIPTION OF WHICH IS SATISFIED BY THE DISCUSSION OF THE 200000Z SURFACE CHART IN THE INITIAL PARAGRAPH. AN ANTICYCLONE THAT WAS NEAR SHANGHAI ON THE 500 MB AND 200 MB CHARTS, WHEN WARNINGS WERE FIRST ISSUED ON LORNA, MOVED TO THE VICINITY OF TOKYO BY THE TIME OF THE LAST WARNING. THE UPPER AIR CIRCULATION WAS AFFECTED AT LEAST THROUGH THE 40,000 FT LEVEL BETWEEN

241200Z AND 251200Z.

THE 1002 MB ISOBAR (LAST CLOSED ONE AT THE PEAK OF LORNA'S SIZE) ENCLOSED ABOUT 950,000 SQ MI. LORNA WAS A LARGE TYPHOON, BUT NOT THE LARGEST OF THE YEAR.

LORNA TRAVELED 1100 MI DURING THE 6 DAYS THAT WARNINGS WERE ISSUED AT AN AVERAGE SPEED OF 7.6 KTS OR 183 MI PER DAY; IT TRAVELED AT A MINIMUM SPEED OF 4 KTS BETWEEN 220000Z AND 221200Z AND AT A MAXIMUM SPEED OF 11 KTS BETWEEN 240000Z AND 250000Z. THE TYPHOON WAS AT ITS MAXIMUM INTENSITY, PRODUCING SURFACE WINDS OF 120 KTS BETWEEN 240600Z AND 241200Z.

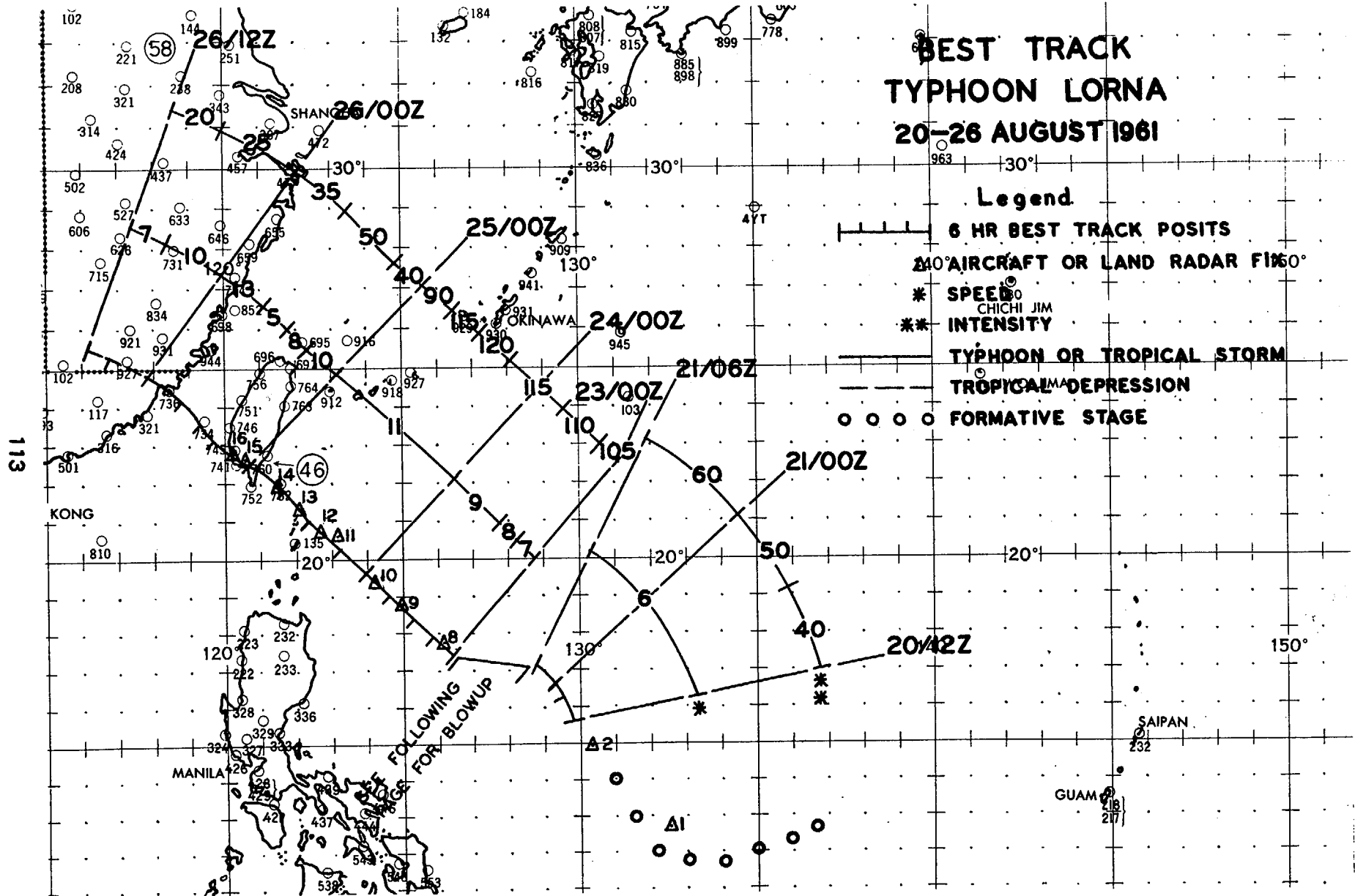
WITH THE EXCEPTION OF THE LOOP, LORNA DID NOT CREATE ANY UNUSUAL FORECAST PROBLEMS.

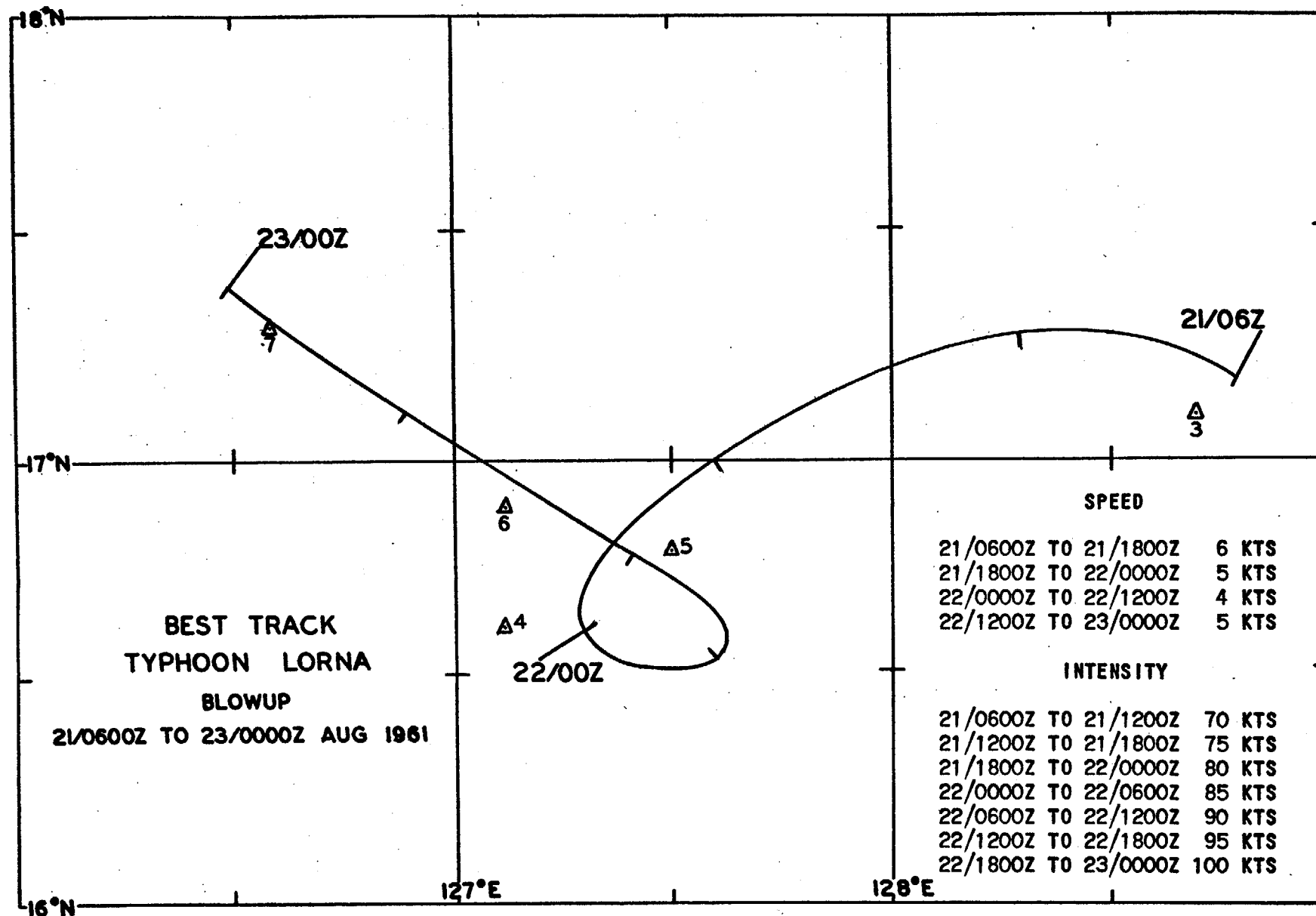
LIMITED INFORMATION INDICATES THAT MAJOR FLOOD DAMAGE OCCURRED TO VILLAGES AND CROPS WITH THREE PERSONS KNOWN DEAD ON TAIWAN. REPORTS WERE NOT AVAILABLE FOR THE ASIATIC MAINLAND.

BEST TRACK TYPHOON LORNA 20-26 AUGUST 1961

Legend

- 6 HR BEST TRACK POSITS
- 240° AIRCRAFT OR LAND RADAR FIX
- * SPEED
- ** INTENSITY
- TYPHOON OR TROPICAL STORM
- TROPICAL DEPRESSION
- FORMATIVE STAGE





LAND RADAR AND AIRCRAFT FIXES - TYPHOON LORNA

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MAX SFC WND	MAX 700MB WND	MIN 700MB HGT	MIN SLP MBS	700MB T/To (°C)	EYE CHARACTERISTICS
1	190610Z	12.8N	132.7E	56-P-08	25	22	10150	---	08/08	CIRC 20MI DIA
2	200450Z	15.3N	130.0E	VW1-R-05	---	---	----	---	-----	CIRC OPEN N
3	210700Z	17.1N	128.7E	56-P-04	70	25	9910	993	15/14	CIRC 40MI DIA OPEN N-E
4	212145Z	16.6N	127.1E	56-P-05	80	40	9820	980	17/15	ILL DEFINED OPEN N & E
5	220900Z	16.8N	127.5E	56-P-07	150	60	9630	974	18/14	CIRC DIA 30MI OPEN NE
6	221530Z	16.9N	127.1E	VW1-R-10	---	---	----	---	-----	25MI DIA OPEN N
7	222300Z	17.3N	126.6E	56-P-05	110	55	9490	976	18/18	ILL DEFINED OPEN N
8	230900Z	17.8N	126.1E	56-P-07	100	70	9380	970	19/07	CIRC DIA 26MI
9	231600Z	18.8N	125.0E	VW1-R-05	---	---	----	---	-----	CIRC DIA 28MI OPEN SE
10	232215Z	19.4N	124.2E	56-P-02	130	70	9000	947	18/12	DIA 35MI OPEN SE
11	240600Z	20.7N	123.1E	LND/RDR	---	---	----	---	-----	-----
12	240900Z	20.8N	122.8E	56-P-07	150	90	8880	950	22/13	CIRC DIA 15MI
13	241200Z	21.2N	122.1E	LND/RDR	---	---	----	---	-----	-----
14	241800Z	21.9N	121.5E	LND/RDR	---	---	----	---	-----	-----
15	250000Z	22.6N	120.6E	LND/RDR	---	---	----	---	-----	-----
16	250130Z	22.9N	120.1E	LND/RDR	---	---	----	---	-----	-----

TYPHOON LORNA 20-26 AUG 1961
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION		24 HR. ERROR	48 HR. ERROR
	LAT.	LONG.	DEG. DISTANCE	DEG. DISTANCE
201200Z	15.7N	129.9E	-----	-----
201800Z	16.3N	129.6E	-----	-----
210000Z	16.7N	129.3E	-----	-----
210600Z	17.2N	128.8E	-----	-----
211200Z	17.3N	128.3E	-----	-----
211800Z	17.0N	127.6E	-----	-----
220000Z	16.6N	127.3E	-----	-----
220600Z	16.5N	127.6E	358-119	-----
221200Z	16.8N	127.4E	340-133	-----
221800Z	17.1N	126.9E	337-124	-----
230000Z	17.4N	126.5E	247-140	-----
230600Z	17.9N	125.9E	241-157	338-149
231200Z	18.4N	125.4E	135-117	333-143
231800Z	19.0N	124.7E	152-105	325-136
240000Z	19.7N	124.0E	165-109	272-159
240600Z	20.4N	123.2E	167-135	206-182
241200Z	21.2N	122.4E	146-166	149-234
241800Z	21.8N	121.6E	243-36	165-210
250000Z	22.7N	120.7E	072-51	169-230
250600Z	23.1N	119.7E	062-114	167-234
251200Z	23.8N	119.3E	039-141	156-259
251800Z	24.2N	118.9E	054-139	037-142
260000Z	24.9N	117.8E	062-110	152-169
260600Z	25.3N	116.8E	019-140	053-240
261200Z	25.5N	116.1E	056-120	048-252

AVERAGE 24 HOUR ERROR 120 MI
AVERAGE 48 HOUR ERROR 196 MI

